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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,953	09/27/2001	Kevin Collins	10006728-1	4853

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EXAMINER	
LE, DIEU MINH T	

ART UNIT	PAPER NUMBER
2114	

DATE MAILED: 06/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/966,953	COLLINS ET AL.	
	Examiner	Art Unit	
	Dieu-Minh Le	2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 April 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,11-19,21-26,28 and 29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9,11-19,21-26,28 and 29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the RCE filed April 21, 2005 in application 09/966,953.

2. Claims 1-9, 11-19, 21-26, and 28-29 are again presented for examination; claims 10, 20, and 27 have been cancelled.

3. Applicant's arguments filed 04/21/2005 with respect to Affidavit rule 131 to overcome the Archibald's reference for the rejection of claims 1-9, 11-19, 21-26, and 28-29 under 35 U.S.C. 103(a) have been fully considered and persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration and search, a new ground(s) of rejection is made in view of Parris and Parks.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 13-19, 21-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per claim 13, "An apparatus for… comprising: computer readable storage media; computer readable program code…" is not clearly understood what type of claim? [apparatus or computer program product]. The examiner recommends that if the applicant is trying claim a product claim, the following example is suggest:

(A computer program product for monitoring performance of a storage device, the computer program product comprising a computer readable storage media and a computer readable program code stored on said computer readable storage media, comprising:

a. program code for …)

Appropriate correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-9, 11-19, 21-26, and 28-29 are rejected under 35 U.S.C. § 103(a) as being unpatentable Parris (US Patent 6,408,406) in view of Parks et al. (US Patent 6,571,354).

As per claim 1:

Parris substantially teaches the invention. Parris teaches:

- A method for monitoring performance of a storage device [fig. 4, abstract, col.2, lines 21-29 and col. 8, lines 18-33] comprising:
- intercepting communications between a computer system and storage device [fig. 1, col. 1, lines 12-19 and col. 4, lines 43-53];
- analyzing intercepted communications relative to a threshold value for the performance of storage device [col. 2, lines 10-13, col. 2, lines 37-46, col. 6, lines 15-17 and col. 10, lines 3-7].

Parris does not explicitly teach:

- responding to a decline in the performance of storage device based on analyzed intercepted communications by automatically reallocating at least some data on storage device.

However, Parris does disclose capability of:

- performance threshold exceed certain level then the disk drive marked as failed disk drive [col. 2, lines 54-57].

In addition, Parks explicitly teaches:

- A storage network for protecting and replacing of storage devices before the failure happens [abstract, col. 1 - lines 16-21 and col.2 - lines 3-9] comprising:

- monitoring of statistics concerning the performance of the storage device [abstract, col.3, lines 11-12];

- reallocation data in responding to a result of suffering from reduced performance of storage device [figs 3, 4, and 11; col. 9, lines 8-16].

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to apply the ***reallocation data in responding to a result of suffering from reduced performance of storage device*** as taught by Parks in conjunction with the method for testing defective disk drive storing performance parameters for continuously logging problem during the operation of the disk drive as disclosed by Parris in order to enhance the storage device, memory programming efficiency (i.e., erasing, programming,

accessing, processing, etc...). One of ordinary skill in the art would have been motivated to do so to improve the memory response time (i.e., data access to and from memory devices and computer devices), memory space allocation, memory process controlling, etc.... It would further obvious because by improving storage device or disk drive performance, the disk drive can be ensured of free of errors or failure in supporting its operation.

As per claim 2:

Parris further teaches:

- measuring access time for storage device [col. 2, lines 58-65, col. 6, lines 43-47, and col. 7, lines 52-62].

As per claim 3:

Parris further teaches:

- correcting measured access time for system overhead [col. 8, lines 34-59].

As per claim 4:

Parris further teaches:

- intercepting an error reported by storage device [col. 8, lines 4-15].

As per claim 5:

Parris further teaches:

- determining an access location [col. 3, lines 1-6] on storage device and an access frequency for data stored thereon, based on intercepted communications [col. 3, lines 7-12].

As per claim 6:

Parris further teaches:

- determining an access location on storage device and an access duration for data stored thereon, based on intercepted communications [col. 3, lines 7-12].

As per claim 7:

Parris further teaches:

- logging communication over time [col. 4, lines 50-52, col. 7, line 7-11];

As per claim 8:

Parris further teaches:

- deriving threshold value based on logged communications [fig. 5, col. 4, lines 50-52, col. 7, line 7-11].

As per claim 9:

Parris further teaches:

- responding to declining performance of storage device comprise:

-- automatically backing up data stored on storage device [fig. 3 col.5 , lines 26-52];

As per claim 11:

Parris further teaches:

- responding to declining performance of storage device comprise:

-- based on usage patterns of data [fig. 3 and 5, col. 1, lines 25-30].

As per claim 12:

Parris further teaches:

- responding to declining performance of storage device comprise:

-- defragmenting at least a portion of storage device [col. 5, line 39 through col. 6, line 14];

As per claims 13-19 and 21-23:

These claims are the same as per claims 1-9 and 11-12. The only minor different is that this claim is directed to an apparatus for monitoring performance of a storage device comprising **computer-readable program media** instead of a method for monitoring performance of a storage device as described in claims 1-9 and 11-12. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to realize that a **computer-readable program media** is a necessary item for such the storage device. Since the storage device obviously needs a means for instruction or code means resided within the computer program media for performing the data access, data access duration, data logging, data analysis, etc... Therefore, these claims are also rejected under the same rationale applied against claims 1-9 and 11-12.

As per claims 24-26:

Due to the similarity of claims 24-26 to claims 1-2 except for an apparatus for monitoring of a storage device comprising evaluating means, responding means, intercepting means, etc... instead of a method for monitoring of a storage device comprising analyzing, responding, intercepting capabilities, etc...therefore, these claims are also rejected under the same

rationale applied against claims 1-2. **In addition, all of the limitations have been noted in the rejection as per claims** 1-2.

As per claims 28-29:

Due to the similarity of claims 28-29 to claims 1, 5-6 therefore, these claims are also rejected under the same rationale applied against claims 1, 5-6. **In addition, all of the limitations have been noted in the rejection as per claims** 1, 5-6.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. A shortened statutory period for response to this action is set to expired THREE (3) months, ZERO days from the date of this letter. Failure to respond within the period for response will cause the application to be abandoned. 35 U.S.C. 133.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dieu-Minh Le whose telephone number is (571) 272-3660. The examiner can

normally be reached on Monday - Thursday from 8:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571)272-3645. The Tech Center 2100 phone number is (571) 272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DIEU-MINH THAI LE
PRIMARY EXAMINER
ART UNIT 2114

DML
6/22/05